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10/597,694	08/03/2006	Yozo Shoji	72314	4956

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EXAMINER	
MAPA, MICHAEL Y	

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/597,694	SHOJI ET AL.	
	Examiner	Art Unit	
	Michael Mapa	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5-7,9 and 11-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5-7,9 and 11-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The applicant has amended the following claims filed on 10/06/08:

Claims: 1, 3, 5, 6, 9 and 11 have been amended.

Claims: 2, 4, 8 and 10 have been cancelled.

Claims: 12-14 have been added.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 3, 5-7, 9 and 11-14 have been considered but are moot in view of the new ground(s) of rejection.

3. With regards to the applicant's statement that Johnson et al. fails to teach and fails to suggest the combination of a second repeater access point station that divides a signal that is received from one of a first repeater access point station and a control access point station into a first and a second signal, the examiner respectfully disagrees with the applicant. Johnson et al discloses each base station to have a 32 MHz slice of the 91-93 GHz range (Paragraph [0033] of Johnson et al.) as well as disclosing that each base station receives and picks off the signals in its predetermined 32 MHz slice from the 91-93 GHz signal which is then retransmitted to the next base station in the chain. The examiner maintains that it is well within the scope of one of ordinary skill in the art to recognize that each base station in the chain receives and retransmits the 91-93 GHz band signal and only picks off the signals that corresponds to its specific 32

MHz slice, therefore it divides the signal into a first and second signal wherein the first signal is just the 32 MHz slice corresponding to the specific base station and the second signal is the 91-93 GHz band sent to the other base stations without the corresponding 32MHz band of the previous base stations.

Claim Objections

4. Claim 6 is objected to because of the following informalities: Claim 6 states "radial terminals" instead of stating "radio terminals". Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3, 6-7, 9 and 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson et al. (US Patent Publication US 2002/0187769 herein after referenced as Johnson).

Regarding claim 1, Johnson discloses "A wireless access method in which there are installed a plurality of access point stations deploying a wireless service area" (Fig. 3 & Paragraph [0012] of Johnson). Johnson discloses "and forming a communication

link with a mobile radio terminal which has entered the service area, and a communication link is formed between the plurality of access point stations to perform communication" (Paragraph [0027] of Johnson, wherein Johnson discloses carrying the signals from several base stations to the central office and then back out again to the cellular base stations for transmission to the user's cellular phones and communication devices). Johnson discloses "the method comprising: performing point-to-multipoint type communication with the mobile radio terminal by providing an RF transceiver in each of the plurality of access point stations" (Paragraphs [0012] & [0027] of Johnson, wherein Johnson discloses the cellular base stations transceivers receiving and transmitting signals to other base stations as well as user's cellular phones and other communication devices, therefore point-to-multipoint). Johnson discloses "performing point-to-point type communication with other access point stations by providing one or more another RF transceivers in each of the plurality of access point stations" (Paragraphs [0012] & [0027] of Johnson, wherein Johnson discloses the cellular base stations transceivers receiving and transmitting signals to other base stations forming a chain from base station to base station back to the central office, therefore point-to-point). Johnson discloses "said plurality of access point stations comprising a control access point station, a first repeater access point station and a second repeater access point station" (Paragraph [0027] of Johnson, wherein Johnson discloses a central office and several cellular base stations). Johnson discloses "said control access point station performing signal modulation/demodulation or access control" (Paragraphs [0027] & [0031] of Johnson, wherein Johnson discloses the central office to perform down-

converts the signals to the cell phone band and uses the standard cellular equipment to detect, switch and route the calls). Johnson discloses "said second repeater access point station dividing a signal into a first signal and a second signal when said second repeater access point station receives said signal from one of said first repeater access point station and said control access point station" (Paragraph [0033] of Johnson, wherein Johnson discloses each base station picks off the signals in its corresponding 32 MHz slice of the 91-93 GHz spectrum and down-converting this band to the cell phone band as well as retransmitting the 91-93 GHz band to the next base station, therefore dividing the signal into a first and second signal). Johnson discloses "said second repeater access point station broadcasting and delivering said first signal to each mobile radio terminal located within a coverage area of said second repeater access point and simultaneously relaying/transmitting said second signal to another one of said access point stations based on a non-reproduction scheme" (Paragraphs [0033] and [0042] of Johnson, wherein Johnson discloses converting the signal to the cell phone band and broadcasting it as well as retransmitting to the next base station in the chain. Johnson also discloses using a heterodyne mixer-down converter to an IF frequency and sending to the optical fiber transmission media, therefore a non-reproduction scheme). Johnson discloses "said second repeater access point station receiving a mobile radio terminal signal from one of said mobile radio terminals located within said coverage area of said second repeater access point station" (Paragraph [0030] of Johnson, wherein Johnson discloses the base station receiving the cell phone frequencies within its cell). Johnson discloses "said second repeater access point

station relaying/transmitting said mobile radio terminal signal to one of said access point stations based on a non-reproduction scheme" (Paragraph [0027] & [0042] of Johnson, wherein Johnson discloses carrying the signal from several base stations to the central office and using a heterodyne mixer-down converter to an IF frequency and sending to the optical fiber transmission media). Johnson discloses "wherein signal processing at each access point station is performed in an IF frequency band obtained by performing down-converting from an RF frequency band" (Paragraph [0042] of Johnson, wherein Johnson discloses a millimeter-wave transceiver filtering the signal received and mixing the signal using a heterodyne mixer-down converter to an IF frequency).

Regarding claim 3, Johnson discloses "The wireless access method according to claim 1, wherein: to a radio signal transmitted from the control access point station to another access point station, there is attached destination information for allowing a destination access point station to perform identification" (Paragraphs [0027] & [0032] of Johnson, wherein Johnson discloses the central office routing the signals for transmission to user's cell phones and communication devices, wherein each base station is given a 32 MHz slice of the spectrum, therefore an attached destination information). Johnson discloses "and each repeater access point station identifies destination information of a received signal, relaying/transmitting the signal to another access point station based on a non-reproduction scheme when the signal is not destined for the own station" (Paragraphs [0033] & [0042] of Johnson, wherein Johnson discloses each base station receives and picks off the signals in its 32 MHz slice and retransmits the 91-93 GHz band to the next base station in the chain). Johnson

discloses “broadcasting the signal to the coverage area of the own station to deliver the signal to all mobile radio terminals when the signal is destined for the own station” (Paragraph [0033] of Johnson, wherein Johnson discloses each base station picks off the signals in its 32 MHz slice and down-converts this band to the cell phone band and broadcasts it).

Regarding claim 6, Johnson discloses “A wireless access system in which there are installed a plurality of access point stations deploying a wireless service area” (Fig. 3 & Paragraph [0012] of Johnson). Johnson discloses “and forming a communication link with a mobile radio terminal which has entered the service area, and a communication link is formed between the plurality of access point stations” (Paragraph [0027] of Johnson, wherein Johnson discloses carrying the signals from several base stations to the central office and then back out again to the cellular base stations for transmission to the user’s cellular phones and communication devices). Johnson discloses “the system comprising: an RF transceiver to form point-to-multipoint type communication link with the mobile radio terminal, said RF transceiver being located in each of said plurality of access point stations” (Paragraphs [0012] & [0027] of Johnson, wherein Johnson discloses the cellular base stations transceivers receiving and transmitting signals to other base stations as well as user’s cellular phones and other communication devices, therefore point-to-multipoint). Johnson discloses “ and one or more another RF transceivers to form a point-to-point type communication link with another access point station” Paragraphs [0012] & [0027] of Johnson, wherein Johnson discloses the cellular base stations transceivers receiving and transmitting signals to

other base stations forming a chain from base station to base station back to the central office, therefore point-to-point). Johnson discloses "said plurality of access point stations comprising: a control access station point, a first repeater access point station and a second repeater access point station" (Paragraph [0027] of Johnson, wherein Johnson discloses a central office and several cellular base stations). Johnson discloses "said first repeater access point station receiving a signal from one of said second repeater access point station and said control station" (Paragraph [0027] of Johnson, wherein Johnson discloses carrying signals from several base stations to the central office and back out again). Johnson discloses "said first repeater access point station dividing said signal into a first signal and a second signal" (Paragraph [0033] of Johnson, wherein Johnson discloses each base station picks off the signals corresponding to its 32 MHz slice and retransmitting the 91-93 GHz to the next base station in the chain, therefore dividing into a first signal and a second signal). Johnson discloses "said first repeater access point station delivering said first signal to each mobile radio terminal located within a coverage area of said first repeater access point station" (Paragraph [0033] of Johnson, wherein Johnson discloses down-converting the 32 MHz slice of the base station picked off from the received signal into the cell phone band and broadcasting it). Johnson discloses "and simultaneously transmitting said second signal to another one of said access point stations based on a non-reproduction scheme" (Paragraph [0033] & [0042] of Johnson, wherein Johnson discloses retransmitting the 91-93 GHz band to the next base station in the chain and using a using a heterodyne mixer-down converter to an IF frequency and sending to the optical

fiber transmission media, therefore a non-reproduction scheme). Johnson discloses "said first repeater access point station receiving a mobile radio terminal signal from one of said mobile radio terminals located within said coverage area of said first repeater access point station" (Paragraph [0030] of Johnson, wherein Johnson discloses the base station receiving the cell phone frequencies within its cell). Johnson discloses "said first repeater access point station transmitting said mobile radio terminal signal to another one of said access point stations" (Paragraph [0027] of Johnson, wherein Johnson discloses carrying the signal from several cellular base stations to the central office). Johnson discloses "wherein signal processing at each access point station is performed in an IF frequency band obtained by performing down-converting from an RF frequency band" (Paragraph [0042] of Johnson, wherein Johnson discloses a millimeter-wave transceiver filtering the signal received and mixing the signal using a heterodyne mixer-down converter to an IF frequency).

Regarding claim 7, Johnson discloses "The wireless access system according to claim 6, wherein the plurality of access point stations are constructed in cascade arrangement or two-dimensionally across a wide area" (Fig. 3 & Paragraph [0027] of Johnson, wherein Johnson discloses the millimeter wave link forming a chain from base station to base station back to the central office). Johnson discloses "whereby a wireless service zone is deployed on a planar surface" (Fig. 1 & Paragraph [0003] of Johnson, wherein Johnson discloses a typical cellular telephone system wherein a service provided divides its territory up into hexagonal cells, therefore a planar surface).

Regarding claim 9, Johnson discloses "The wireless access system according to

claim 6." The examiner rejects claim 9 with the same arguments provided above (see claim 3).

Regarding claim 12, Johnson discloses "A wireless access method, comprising: providing a plurality of access point stations, each access point station transmitting a wireless service to define a wireless service area" (Fig. 3 & Paragraph [0012] of Johnson). Johnson discloses "providing a first RF transceiver in each of said plurality of access point stations; performing point-to-multipoint type communication with a mobile radio terminal located in one or more of said wireless service areas with said first RF transceiver" (Paragraphs [0012] & [0027] of Johnson, wherein Johnson discloses the cellular base stations transceivers receiving and transmitting signals to user's cellular phones and other communication devices, therefore point-to-multipoint). Johnson discloses "providing a second RF transceiver in each of said plurality of access point stations; performing point-to-point type communication with one of said access point stations and another of said access point stations via said second RF transceivers" (Paragraphs [0012] & [0027] of Johnson, wherein Johnson discloses the cellular base stations transceivers receiving and transmitting signals to other base stations forming a chain from base station to base station back to the central office, therefore point-to-point). Johnson discloses "said plurality of access point stations comprising a control access point station, a first repeater access point station and a second repeater access point station" (Paragraph [0027] of Johnson, wherein Johnson discloses a central office and several cellular base stations). Johnson discloses "said control access point station performing signal modulation/demodulation or access control" (Paragraphs [0027] &

[0031] of Johnson, wherein Johnson discloses the central office to perform down-converts the signals to the cell phone band and uses the standard cellular equipment to detect, switch and route the calls). Johnson discloses "said second repeater access point station dividing a signal into a first signal and a second signal when said second repeater access point station receives a signal from one of said first repeater access point station and said control access point station" (Paragraph [0033] of Johnson, wherein Johnson discloses each base station picks off the signals in its corresponding 32 MHz slice of the 91-93 GHz spectrum and down-converting this band to the cell phone band as well as retransmitting the 91-93 GHz band to the next base station, therefore dividing the signal into a first and second signal). Johnson discloses "said second repeater access point station delivering said first signal to one or more mobile radio terminals located within said wireless service area of said second repeater access point" (Paragraphs [0033] of Johnson, wherein Johnson discloses converting the signal to the cell phone band and broadcasting it). Johnson discloses "and simultaneously delivering said second signal to another one of said access point stations" (Paragraphs [0033] of Johnson, wherein Johnson discloses retransmitting to the next base station in the chain). Johnson discloses "said second repeater access point station receiving a mobile radio terminal signal from one of said mobile radio terminals located within said wireless service area of said second repeater access point station" (Paragraph [0030] of Johnson, wherein Johnson discloses the base station receiving the cell phone frequencies within its cell). Johnson discloses "said second repeater access point station delivering said mobile radio terminal signal to another one access point stations"

(Paragraph [0027] of Johnson, wherein Johnson discloses carrying the signal from several base stations to the central office). Johnson discloses "wherein signal processing at each access point station is performed in an IF frequency band obtained by performing down-converting from an RF frequency band" (Paragraph [0042] of Johnson, wherein Johnson discloses a millimeter-wave transceiver filtering the signal received and mixing the signal using a heterodyne mixer-down converter to an IF frequency).

Regarding claim 13, Johnson discloses "A wireless access method according to claim 12." The examiner rejects claim 13 with the same arguments provided above (see claim 3).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 5, 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (US Patent Publication US 2002/0187769 herein after referenced as Johnson) in view of NPL document "Millimeter-wave Ad-hoc Wireless Access System" herein after referenced as NPL1.

Regarding claim 5, Johnson discloses "The wireless access method according to claim 1." Johnson fails to explicitly recite "wherein the RF transceiver included in the access point station is based on a millimeter-wave self-heterodyne scheme."

In a similar field of endeavor, NPL 1 discloses "wherein the RF transceiver included in the access point station is based on a millimeter-wave self-heterodyne scheme" (Fig. 3 & Page 2, Column 1 Lines 1-16 of NPL1, wherein NPL1 discloses using a millimeter-wave self heterodyne transmission technique to the RF transceiver which greatly reduces the cost of developing and constructing an RF transceiver).

Therefore it would have been obvious to one of ordinary skill in the art to modify the invention of Johnson to incorporate the teachings of NPL1 for the purpose of greatly reducing the cost of developing and constructing an RF transceiver (Fig. 3 & Page 2, Column 1 Lines 1-16 of NPL1).

Regarding claim 11, Johnson discloses "The wireless access system according to claim 6." The examiner rejects claim 11 with the same arguments provided above (see claim 5).

Regarding claim 14, Johnson discloses "A wireless access method according to claim 12." The examiner rejects claim 14 with the same arguments provided above (see claim 5).

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Mapa whose telephone number is (571)270-5540. The examiner can normally be reached on MONDAY TO THURSDAY 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro can be reached on (571)272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Mapa/
Examiner, Art Unit 2617

/NICK CORSARO/
Supervisory Patent Examiner, Art Unit 2617

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